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EXAMINER

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ART UNIT	PAPER NUMBER
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3626

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Notice To Applicant

1. This communication is in response to the application filed on 23 October 2001. Claims 1-34 are pending. The IDS statement filed on 04 March 2003 has been entered and considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Apte et al. (5,970,464; hereinafter Apte), in view of DeTore et al. (4,975,840; hereinafter DeTore).

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(A) As per claim 1, Apte discloses a method for predicting the profitability of an insurance policy comprising the steps of:

- (a) gathering policyholder data including premium and loss data for storing in a database (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14);
- (b) identifying external data sources directed to at least one of business level data and household demographics data, the external data sources having a plurality of external variables to be used in predicting the profitability of the insurance policy (Apte: col. 3, lines 5-19; Fig. 1-14);
- (c) associating the external variables with the policyholder data (Apte: abstract; col. 1, lines 53-67; Fig. 1-14); and
- (d) creating a statistical model based on the individual external predictive variables (Apte: abstract; col. 3, lines 44-53; col. 6, line 44-col. 7, line 17; Fig. 1-14).

Apte, however, fails to expressly disclose a method for predicting the profitability of an insurance policy comprising the steps of:

- (d) evaluating the associated external variables against the policyholder data to identify the individual external variables predictive of the insurance policy's profitability.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses a method for predicting the profitability of an insurance policy comprising the steps of:

- (d) evaluating the associated external variables against the policyholder data to identify the individual external variables predictive of the insurance policy's profitability (DeTore: abstract; col. 7, lines 9-23; col. 15, lines 42-59; Fig. 1-12); and

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

- (B) As per claim 2, Apte fails to expressly disclose the method of claim 1 further comprising the step of creating the statistical model utilizing a multivariate statistical approach.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 1 further comprising the step of creating the statistical model utilizing a multivariate statistical approach (DeTore:

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abstract; col. 4, lines 36-53; Fig. 1-12; Examiner notes DeTore's teaching of multiple variables in statistically assessing risks.).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(C) As per claim 3, Apte fails to expressly disclose the method of claim 1 further comprising the steps of creating individual records in the database for each policyholder and populating each individual record with premium and loss data, business name, address and zip code for each policyholder and the associated external variables.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 1 further comprising the steps of creating individual records in the database for each policyholder and populating each individual record with premium and loss data, business name, address and zip code for each policyholder and the associated external variables (DeTore: abstract; col. 4, lines 21-35; col. 17, line 62-col. 19, line 13; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

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(D) As per claim 4, Apte fails to expressly disclose the method of claim 1 further comprising the step of associating at least one individual external variable with the individual records based on a unique data key associated with at least one external data source.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 1 further comprising the step of associating at least one individual external variable with the individual records based on a unique data key associated with at least one external data source (DeTore: abstract; col. 4, lines 36-col. 6, line 3; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(E) As per claim 5, Apte fails to expressly disclose the method of claim 1 further comprising the step of normalizing the policyholder data in the database.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 1 further comprising the step of normalizing the policyholder data in the database (DeTore: abstract; col. 15, lines 42-59; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of

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providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(F) As per claim 6, Apte discloses the method of claim 5 wherein the normalizing step further comprises the step of premium manualization, the step of loss trending and the step of loss capping (Apte: abstract; Fig. 1-14; Examiner also notes Applicant's admission in the background of the invention of the present application (10/054,702) that premium manualization is a commonly practiced technique.).

(G) As per claim 7, Apte discloses the method of claim 1 wherein the external data sources include external variables for geographic factors (Apte: abstract; col. 3, lines 6- col. 4, line 54; Fig. 1-14).

The Examiner has noted insofar as claim 7 recites "include external variables for at least one of geographic factors, business stability and weather patterns," geographic factors has been recited.

(H) As per claim 8, Apte fails to expressly disclose the method of claim 1 wherein the step of evaluating the external variables further comprises the step of examining the external variables for cross-correlation against one another in order to eliminate repetitive external variables.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 1 wherein the step of

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evaluating the external variables further comprises the step of examining the external variables for cross-correlation against one another in order to eliminate repetitive external variables (DeTore: abstract; col. 15, lines 42-59; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(I) As per claim 9, Apte discloses the method of claim 1 further comprising the step of dividing the data in the database into a validation data set for evaluating the predictiveness of the statistical model (Apte: abstract; col. 3, line 60-col. 4, line 1; Fig. 1-14).

Apte, however, fails to expressly disclose the method of claim 1 further comprising the step of dividing the data in the database into a training data set for developing the statistical model, and a testing data set for refining the statistical model.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 1 further comprising the step of dividing the data in the database into a training data set for developing the statistical model, and a testing data set for refining the statistical model (DeTore: abstract; col. 6, lines 10-21; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of

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providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(J) As per claim 10, Apte discloses the method of claim 1 wherein the step of identifying the external variables predictive of an insurance policy's profitability further includes the steps of:

- (a) calculating for each policyholder the loss ratio based on the normalized policyholder data (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14);
- (b) defining a subgroup from the policyholder data (Apte: abstract; col. 1, lines 53-60; Fig. 1-12);
- (c) calculating a cumulative loss ratio for the subgroup (Apte: abstract; col. 9, lines 29-43; Fig. 1-14); and
- (d) performing a statistical analysis to identify statistical relationships between individual external variables and the cumulative loss ratio for the subgroup (Apte: abstract; col. 9, lines 29-43; Fig. 1-14).

Apte, however, fails to expressly disclose the method of claim 1 wherein the step of identifying the external variables predictive of an insurance policy's profitability further includes the steps of:

- (e) normalizing the policyholder data.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 1 wherein the step of identifying the external variables predictive of an insurance policy's profitability further includes the steps of:

- (e) normalizing the policyholder data (DeTore: abstract; col. 15, lines 42-59; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

- (H) As per claim 11, Apte fails to expressly disclose the method of claim 10 wherein the identified predictive external variables are examined for cross-correlations against one another.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 10 wherein the identified predictive external variables are examined for cross-correlations against one another (DeTore: abstract; col. 15, lines 42-59; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(l) As per claim 12, Apte fails to expressly disclose the method of claim 10 wherein the statistical model is created using multivariate methods to produce coefficients for each of the external predictive variables and the coefficients represent the contribution of the each of the external predictive variables to an overall score (DeTore: abstract; col. 4, lines 36-53; Fig. 1-12).

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 10 wherein the statistical model is created using multivariate methods to produce coefficients for each of the external predictive variables and the coefficients represent the contribution of the each of the external predictive variables to an overall score (DeTore: abstract; col. 4, lines 36-53; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(J) As per claim 13, Apte discloses a method for creating a statistical model that generates a score representative of the profitability of an insurance policy for at least one of a new policyholder and an existing policyholder, comprising the steps of:

- (a) gathering historical policyholder data including loss and premium data (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14);
- (b) identifying external data sources having a plurality of external variables, each external variable having a value (Apte: col. 3, lines 5-19; Fig. 1-14);
- (c) calculating a loss ratio for each policyholder in the database based on the working data (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14); and
- (d) calculating a cumulative loss ratio for a defined group of policyholders in the database (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14).

Apte, however, fails to expressly disclose a method for creating a statistical model that generates a score representative of the profitability of an insurance policy for at least one of a new policyholder and an existing policyholder, comprising the steps of:

- (e) applying actuarial transformation to the policyholder data to generate working data (DeTore: abstract; col. 16, lines 20-34; Fig. 1-12);

- (f) performing a statistical analysis that investigates the relationship of each external variable and the cumulative loss ratio for the defined group to identify external variables that are predictive of the profitability of the insurance policy (DeTore: abstract; col. 4, lines 36-53; Fig. 1-12); and
- (g) utilizing the predictive external variables identified in the previous step to develop a statistical model that generates a score predictive of the profitability of the insurance policy (DeTore: abstract; col. 4, lines 36-53; Fig. 1-12).

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses a method for creating a statistical model that generates a score representative of the profitability of an insurance policy for at least one of a new policyholder and an existing policyholder, comprising the steps of:

- (e) applying actuarial transformation to the policyholder data to generate working data (DeTore: abstract; col. 16, lines 20-34; Fig. 1-12);
- (f) performing a statistical analysis that investigates the relationship of each external variable and the cumulative loss ratio for the defined group to identify external variables that are predictive of the profitability of the insurance policy (DeTore: abstract; col. 4, lines 36-53; Fig. 1-12); and
- (g) utilizing the predictive external variables identified in the previous step to develop a statistical model that generates a score predictive of the

profitability of the insurance policy (DeTore: abstract; col. 4, lines 36-53; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(K) As per claim 14, Apte fails to expressly disclose the method of claim 13 wherein the statistical model is used to score at least one of an existing policyholder and a new policyholder in order to determine the premium for a commercial insurance policy.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 13 wherein the statistical model is used to score at least one of an existing policyholder and a new policyholder in order to determine the premium for a commercial insurance policy (DeTore: abstract; col. 4, lines 36-53; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

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(L) As per claim 15, Apte discloses the method of claim 13 further comprising the steps of manualizing the premium data, modifying long tail losses and capping large losses (Apte: abstract; Fig. 1-14; Examiner also notes Applicant's admission in the background of the invention of the present application (10/054,702) that premium manualization is a commonly practiced technique.).

(M) As per claim 16, Apte fails to expressly disclose the method of claim 13 further comprising the step of binning together similar values of an external variable having multiple values.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the method of claim 13 further comprising the step of binning together similar values of an external variable having multiple values (DeTore: abstract; col. 15, lines 42-59; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(N) Claim 17 substantially repeats the same limitations of claim 8 and is therefore, rejected for the same reason given for claim 8, and incorporated herein.

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(O) Claim 18 substantially repeats the same limitations of claim 9 and is therefore, rejected for the same reason given for claim 9, and incorporated herein.

(P) Claim 19 substantially repeats the same limitations of claim 12 and is therefore, rejected for the same reason given for claim 12, and incorporated herein.

(Q) Claim 20 substantially repeats the same limitations of claim 1 and is therefore, rejected for the same reason given for claim 1, and incorporated herein.

(R) Claim 21 substantially repeats the same limitations of claim 12 and is therefore, rejected for the same reason given for claim 12, and incorporated herein.

(S) As per claim 22, Apte fails to expressly disclose the system of claim 21 wherein the multivariate method includes at least one of multiple regression.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the system of claim 21 wherein the multivariate method includes at least one of multiple regression (DeTore: abstract; col. 5, lines 6-18; Fig. 1-12) (The Examiner has noted insofar as claim 22 recites "includes at least one of multiple regression and generalized linear modeling," multiple regression has been recited.)

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of

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providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(T) Claim 23 substantially repeats the same limitations of claims 1 and 12 and is therefore, rejected for the same reason given for claims 1 and 12, and incorporated herein.

(U) As per claim 24, Apte fails to expressly disclose the system of claim 23 wherein the means for performing a statistical method comprises a software application that includes algorithms for performing at least one of multivariate statistical methods.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses the system of claim 23 wherein the means for performing a statistical method comprises a software application that includes algorithms for performing at least one of multivariate statistical methods (DeTore: abstract; col. 4, lines 36-53; Fig. 1-12) (The Examiner has noted insofar as claim 24 recites "includes algorithms for performing at least one of multivariate statistical methods, clustering methods, decision tree techniques and neural network techniques," multivariate statistical methods has been recited.).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(V) As per claim 25, Apte discloses a method of performing risk-based pricing of an insurance policy comprising the steps of:

- (a) evaluating the risk associated with issuing the insurance policy based on a profitability score derived from a statistical model generated with historical policyholder premium and loss data and external predictive variables identified from external data sources independent of internal policy holder data of an insurance company issuing the insurance policy (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14).

Apte, however, fails to expressly disclose a method of performing risk-based pricing of an insurance policy comprising the steps of:

- (b) receiving a request for a price on an insurance policy.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore. In particular, DeTore discloses a method of performing risk-based pricing of an insurance policy comprising the steps of:

- (b) receiving a request for a price on an insurance policy (DeTore: abstract; col. 17, line 62-col. 19, line 5; Fig. 1-12).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the teachings of Apte with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

(W) Claim 26 substantially repeats the same limitations of claim 7 and is therefore, rejected for the same reason given for claim 7, and incorporated herein.

(X) Claim 27 substantially repeats the same limitations of claim 3 and is therefore, rejected for the same reason given for claim 3, and incorporated herein.

(Y) Claim 28 substantially repeats the same limitations of claim 8 and is therefore, rejected for the same reason given for claim 8, and incorporated herein.

(Z) Claim 29 substantially repeats the same limitations of claim 10 and is therefore, rejected for the same reason given for claim 10, and incorporated herein.

(AA) Claim 30 substantially repeats the same limitations of claim 8 and is therefore, rejected for the same reason given for claim 8, and incorporated herein.

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(BB) Claim 31 substantially repeats the same limitations of claim 12 and is therefore, rejected for the same reason given for claim 12, and incorporated herein.

(CC) Claim 32 substantially repeats the same limitations of claim 9 and is therefore, rejected for the same reason given for claim 9, and incorporated herein.

(DD) Claim 33 substantially repeats the same limitations of claims 13 and 25 and is therefore, rejected for the same reason given for claims 13 and 25, and incorporated herein.

(EE) Claim 34 substantially repeats the same limitations of claim 1 and is therefore, rejected for the same reason given for claim 1, and incorporated herein.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The cited but not applied art teaches a method of evaluating a permanent life insurance policy (6,456,979); a life insurance method and system (5,752,236); a computerized insurance premium quote request and policy issuance system (4,831,526); a method for accessing and evaluating information for processing an application for insurance and neural networks (5,809,478); a method for generating

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predictive models in a computer system (5,692,107); a method of determining the premium for and writing a policy insuring against specified weather conditions (4,766,539); process database entries to provide predictions of future data values (6,725,210); prediction input (6,473,084); a method and apparatus for rating geographical areas using meteorological conditions (5,839,113); and an integrated group insurance information processing and reporting system based upon an enterprise-wide data structure (5,191,522).

The cited but not applied prior art also includes non-patent literature articles by Dionne, Georges ("Handbook of Insurance" Copyright 2000. Kluwer Academic Publishers Group.) and Clapp, John M., Fields, Joseph A., Ghosh, and Chinmoy, Ghosh. ("An Examination of Profitability In Spatial Markets: The Case of Life Insurance Agency Locations" Sep 1990. Journal of Risk and Insurance. Vol. 57, Iss. 3.).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Tomaszewski whose telephone number is (571)272-8117. The examiner can normally be reached on M-F 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on (571)272-6776. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MT



C. LUKE GILLIGAN
PATENT EXAMINER